**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1. (currently amended) A method of producing a glass substrate for a mask blank, in which a surface of the glass substrate is polished by the use of a polishing liquid containing abrasive grains, wherein:

the abrasive grains comprise colloidal silica abrasive grains produced by hydrolysis of an organosilicon compound, a content of alkali metal in the colloidal silica abrasive grains being 0.1 ppm or less,

the polishing liquid has a pH value between 7.0 and 7.6,

the glass substrate is one of a glass substrate for a phase shift mask blank to be exposed by an ArF excimer laser, a glass substrate for a phase shift mask blank to be exposed by an $F_2$ excimer laser, and a glass substrate for a EUV reflective mask blank, ~~protrusions being present on the surface of the glass substrate so as to cause a phase defect~~and

the surface of the glass substrate is polished so as to have a surface roughness required in an exposure wavelength to be used ~~and so as to suppress occurrence of the protrusions,~~ so that a height of a protrusion on the surface of the glass substrate falls within a phase defect range that is allowable for the exposure wavelength, the protrusion being generated by an aggregate of the colloidal silica abrasive grains adhered to the surface of the glass substrate.

~~the abrasive grains comprise colloidal silica abrasive grains produced by hydrolysis of an organosilicon compound, a content of alkali metal in the colloidal silica abrasive grains being 0.1 ppm or less,and~~

~~the polishing liquid has a pH value between 7.0 and 7.6.~~

2. (currently amended) A method of producing a glass substrate for a mask blank, in which a surface of the glass substrate is polished by the use of a polishing liquid containing abrasive grains, wherein:

the polishing liquid comprises colloidal silica abrasive grains,

the polishing liquid is neutral,

the glass substrate is one of a glass substrate for a phase shift mask blank to be exposed by an ArF excimer laser, a glass substrate for a phase shift mask blank to be exposed by an $F_2$ excimer laser, and a glass substrate for a EUV reflective mask blank, ~~protrusions being present on the surface of the glass substrate so as to cause a phase defect,~~ and

the surface of the glass substrate is polished so as to have a surface roughness required in an exposure wavelength to be used so that a height of a protrusion on the surface of the glass substrate falls within a phase defect range that is allowable for the exposure wavelength, the protrusion being generated by an aggregate of the colloidal silica abrasive grains adhered to the surface of the glass substrate.~~and so as to suppress occurrence of the protrusions, and~~

~~the polishing liquid comprises colloidal silica abrasive grains and has a pH value between 7.0 and 7.6, and~~

~~a content of alkali metal in the colloidal silica abrasive grains is 0.1 ppm or less .~~

**3. (cancelled)**

4. (currently amended) A method of producing a glass substrate for a mask blank, comprising a polishing process of polishing a surface of the glass substrate by the use of a polishing liquid containing abrasive grains, wherein:

the glass substrate is one of a glass substrate for a phase shift mask blank to be exposed by an ArF excimer laser, a glass substrate for a phase shift mask blank to be exposed by an $F_2$ excimer laser, and a glass substrate for a EUV reflective mask blank, ~~protrusions being present on the surface of the glass substrate so as to cause a phase defect,~~

the polishing process comprises;

a surface roughness control step of finishing the surface of the glass substrate to a surface roughness required in an exposure wavelength to be used by using the polishing liquid comprising colloidal silica abrasive grains and moving a polishing member and the glass substrate relative to each other while the polishing member is pressed against the surface of the glass substrate under a predetermined pressure, and

a protrusion suppressing step, following the surface roughness control step, of using the polishing liquid comprising colloidal silica abrasive grains, controlling to a pressure lower than the predetermined pressure and suppressing occurrence of ~~the~~a protrusions by moving the

polishing member and the glass substrate relative to each other so that a height of the protrusion on the surface of the glass substrate falls within a phase defect range that is allowable for the exposure wavelength, the protrusion being generated by an aggregate of the colloidal silica abrasive grains adhered to the surface of the glass substrate.;

~~wherein a content of alkali metal in the colloidal silica abrasive grains is 0.1 ppm or less.~~

5. (original) A method according to claim 4, wherein:

the pressure applied to the substrate in the protrusion suppressing step is 100 g/cm$^2$ or less.

**6.-8. (Cancelled)**

9. (previously presented) A method of producing a mask blank, wherein:

a thin film for causing an optical change in exposure light is formed on a principal surface of the glass substrate produced by the method according to any one of claims 1, 2 and 4.

10. (original) A method of producing a transfer mask, wherein:

the thin film of the mask blank produced by the method according to claim 9 is patterned to form a thin film pattern on the glass substrate.

**11.-14. (cancelled)**

15. (previously presented) A method according to claim 4, wherein:

the polishing rate in the protrusion suppressing step is 0.12 μm/min or less.

16. (previously presented) A method according to claim 4, wherein:

the protrusion suppressing step is carried out successively after the surface roughness control step.

17. (previously presented) A method according to any one of claims 1, 2 and 4, wherein:

the surface roughness is 0.2 nm or less in root-mean-square surface roughness (RMS).

18. (previously presented) A method according to any one of claims 1, 2 and 4, wherein:

a defect of the surface is detected by using a defect inspection system comprising laser interference confocal optics after the polishing.

19. (currently amended) A method of producing a glass substrate for a mask blank, comprising a polishing process of polishing a surface of the glass substrate by the use of a polishing liquid containing abrasive grains, wherein:

the method further comprises a defect detecting step of detecting a defect of the surface by using a defect inspection system comprising laser interference confocal optics after the polishing process,

the abrasive grains comprise colloidal silica abrasive grains produced by hydrolysis of an organosilicon compound, a content of alkali metal in the colloidal silica abrasive grains being 0.1 ppm or less,

the polishing liquid has a pH value between 6 and 8,

the glass substrate is one of a glass substrate for a phase shift mask blank to be exposed by an ArF excimer laser, a glass substrate for a phase shift mask blank to be exposed by an $F_2$ excimer laser, and a glass substrate for a EUV reflective mask blank,

the polishing process is carried out so as to have a surface roughness required in an exposure wavelength to be used so that a height of a protrusion on the surface of the glass substrate falls within a phase defect range that is allowable for the exposure wavelength, the protrusion being generated by an aggregate of the colloidal silica abrasive grains adhered to the surface of the glass substrate.

~~the abrasive grains comprise colloidal silica abrasive grains produced by hydrolysis of an organosilicon compound, a content of alkali metal in the colloidal silica abrasive grains being 0.1 ppm or less and~~

~~the polishing liquid has a pH value between 6 and 8.~~

20. (currently amended) A method of producing a glass substrate for a mask blank, comprising a polishing process of polishing a surface of the glass substrate by the use of a polishing liquid containing abrasive grains, wherein:

the method further comprises a defect detecting step of detecting a defect of the surface by using a defect inspection system comprising laser interference confocal optics after the polishing process,

the polishing liquid comprises colloidal silica abrasive grains and has a pH value between 6 and 8,

a content of alkali metal in the colloidal silica abrasive grains is 0.1 ppm or less,

the glass substrate is one of a glass substrate for a phase shift mask blank to be exposed by an ArF excimer laser, a glass substrate for a phase shift mask blank to be exposed by an $F_2$ excimer laser, and a glass substrate for a EUV reflective mask blank, ~~protrusions being present on the surface of the glass substrate so as to cause a phase defect,~~ and

the polishing process is carried out so as to have a surface roughness required in an exposure wavelength to be used ~~and~~ so that a height of a protrusion on the surface of the glass substrate falls within a phase defect range that is allowable for the exposure wavelength, the protrusion being generated by an aggregate of the colloidal silica abrasive grains adhered to the surface of the glass substrate, ~~as to suppress occurrence of the protrusions,~~

~~the polishing liquid comprises colloidal silica abrasive grains and has a pH value between 6 and 8, and~~

~~a content of alkali metal in the colloidal silica abrasive grains is 0.1 ppm or less.~~

21. (previously presented) A method according to claim 4, wherein:

the polishing liquid is alkaline.